



(12) **EUROPEAN PATENT APPLICATION**

(21) Application number : **93303523.0**

(51) Int. Cl.⁵ : **E21B 33/129**

(22) Date of filing : **06.05.93**

(30) Priority : **12.05.92 US 883619**

(43) Date of publication of application :
18.11.93 Bulletin 93/46

(84) Designated Contracting States :
AT DE FR GB IT NL

(88) Date of deferred publication of search report :
09.03.94 Bulletin 94/10

(71) Applicant : **HALLIBURTON COMPANY**
P.O. Box 1431
Duncan Oklahoma 73536 (US)

(72) Inventor : **Streich, Steven G.**
1605 Terrace Drive
Duncan, Oklahoma 73533 (US)
Inventor : **Hushbeck, Donald F.**
2609 Leigh, Duncan
Oklahoma 73533 (US)
Inventor : **Berscheidt, Kevin T.**
730 Drexal, Duncan
Oklahoma 73533 (US)
Inventor : **Jacobi, Rick D.**
714 Carriage Drive, Duncan
Oklahoma 73533 (US)

(74) Representative : **Wain, Christopher Paul et al**
A.A. THORNTON & CO. Northumberland
House 303-306 High Holborn
London WC1V 7LE (GB)

(54) **Downhole tool apparatus with non-metallic slips.**

(57) A downhole tool apparatus such as a packer or bridge plug, for use in a well bore, comprises a centre mandrel (102), a slip wedge (126) around the mandrel, separate non-metallic slips (116) around the mandrel adjacent the wedge, and means (117) for retaining the slips initially out of engagement with the well bore. The non-metallic material may include engineering grade plastics. The slips can be separate and held in place in an initial position around the slip wedge by a retainer ring, or they may be integrally formed with a fracturable ring portion which holds the slips in the initial position around the wedge.

The use of non-metallic material improves the drillability of the apparatus when drilling is required to remove the apparatus from the well.

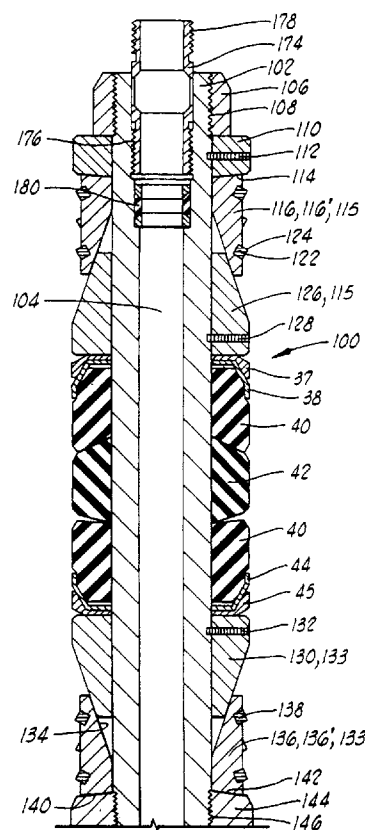


FIG. 3A

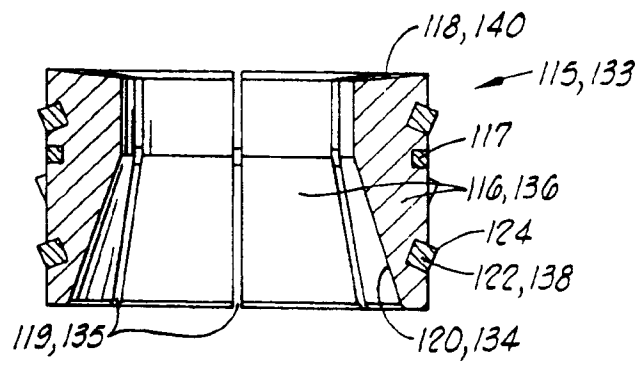


FIG. 9



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 93 30 3523

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CL5)
D,X	EP-A-0 454 466 (HALLIBURTON CO.) * column 3, line 23 - line 25 * * column 5, line 23 - line 28 * * column 6, line 40 - column 7, line 13 * * column 7, line 24 - line 30 * * claims 7,8 * ---	1-3,5,6	E21B33/129
A	US-A-3 529 667 (B.C.MALONE) * column 4, line 38 -paragraph 42; figure 7 * ---	8-10	
P,D, X	EP-A-0 519 757 (HALLIBURTON CO.) * the whole document * -----	1-3,5-8	
			TECHNICAL FIELDS SEARCHED (Int.CL5)
			E21B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 January 1994	Examiner Rampelmann, K
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.92 (P04C01)